

LABARON



Introduction

LaBaron Lake is high in the Tushar Mountains east of Beaver. It is a small, shallow natural lake in a high meadow. It was originally either a small natural lake or a small reservoir that was enlarged by the Division of Wildlife Resources as a stabilized lake for recreational fishing in 1966. Water levels are controlled by a dam. It

is also known as Laron Reservoir, Blainey Reservoir and LaBaron Lake Reservoir.

The reservoir shoreline is 80% publicly owned and administered by the Fish Lake National Forest with unrestricted public access. The remaining 20%, on the east side, is privately owned and is being developed into

Characteristics and Morphometry	
Lake elevation (meters / feet)	3018 / 9900
Surface area (hectares / acres)	9.47 / 23
Watershed area (hectares / acres)	317 / 768
Volume (m ³ / acre-feet)	
capacity	317,300 / 257
conservation pool	317,300 / 257
Annual inflow (m ³ / acre-feet)	Unknown
Retention time (years)	Unknown
Drawdown (m ³ / acre-feet)	0 / 0
Depth (meters / feet)	
maximum	6.5 / 21.3
mean	3.23 / 10.6
Length (meters / feet)	547 / 1,795
Width (meters / feet)	277 / 910
Shoreline (meters / feet)	1,219 / 4,000

Location	
County	Beaver
Longitude / Latitude	112 23 50 / 38 13 30
USGS Map	Circleville Mountain, Utah, 1971
DeLorme's Utah Atlas and Gazetteer™	Page 26, B-3
Cataloging Unit	Beaver River (16030007)

recreational homes. Although the defined beneficial uses include: water recreation excluding swimming, propagation of cold water species of game fish and aquatic life, and agricultural needs, it is currently used solely for recreation and cold water aquatic habitat. No changes are foreseen in water use in the future.

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Recreation

LaBaron Lake is accessible from FS-137, a gravel road across the north slope of Circleville Mountain also passing by Kents Lake and Anderson Meadow Reservoir. FS-137 originates and terminates at separate junctions with U-153.

From the west, exit I-15 at Beaver and travel up Beaver Canyon on U-153 for about 10 miles to the FS-137 turnoff, at Little Cottonwood Campground. Travel on FS-137 for another 10 miles to LaBaron Lake. From the east, travel up U-153 (this segment is unpaved) from US-89 at Junction for 12 miles to FS-173, and go three miles on FS-173 to LaBaron Lake.

Fishing, boating, swimming, and camping are possible in the area. Usage is fairly heavy.

Recreational facilities at the reservoir consist of one vault toilet, and the area offers itself to primitive camping. There are Forest Service Campgrounds at Anderson Meadows and Kents Lake, 4 and 8 miles west of LaBaron Lake on FS-173. Both charge fees and have about 10 campsites, drinking water and vault toilets. City Creek Campground is on U-153 8 miles east of the Lake. There are also several private campgrounds in Beaver.

Watershed Description

The reservoir is in an area of glaciated draws on the north slope of Circleville Mountain in the Tushar Range. The watershed high point, the northeast shoulder of Circleville Mountain, is 3,362 m (11,031 ft) above sea level, thereby developing a complex slope of 32.1% to the reservoir. The inflow and outflow is LaBaron Creek, and the average stream gradient above the reservoir is 7.3% (386 feet per mile).

The soil is largely of volcanic origin with moderate permeability and moderately slow erosion and runoff.

The vegetation communities are comprised of pine, aspen, spruce-fir, oak and maple. The watershed receives 51 - 64 cm (20 - 25 inches) of precipitation annually with a frost-free season of 0 - 20 days at the reservoir.

Limnological Assessment

The water quality of LaBaron Reservoir is good. It is considered to be soft with a hardness concentration value of approximately 23 mg/L (CaCO₃). The only parameters that have exceeded State water quality standards for defined beneficial uses are phosphorus and dissolved oxygen. The average concentration of total phosphorus in the water column in 1992 was 68 ug/L which exceeds the recommended pollution indicator for phosphorus of 25 ug/L. The phosphorus concentration in the hypolimnion on August 12, 1992 reached a level of 226 ug/L with a depth of only 5.8 meters, but anoxic conditions were present near the bottom. Dissolved oxygen concentrations in late

Limnological Data

Data sampled from STORET site:

594128

Surface Data	1992
Trophic Status	E
Chlorophyll TSI	55.06
Secchi Depth TSI	44.41
Phosphorous TSI	53.67
Average TSI	51.05
Chlorophyll <i>a</i> (ug/L)	12.1
Transparency (m)	2.95
Total Phosphorous (ug/L)	31
pH	9.1
Total Susp. Solids (mg/L)	<3
Total Volatile Solids (mg/L)	1
Total Residual Solids (mg/L)	2
Temperature (°C / °f)	15/59
Conductivity (umhos/cm)	61

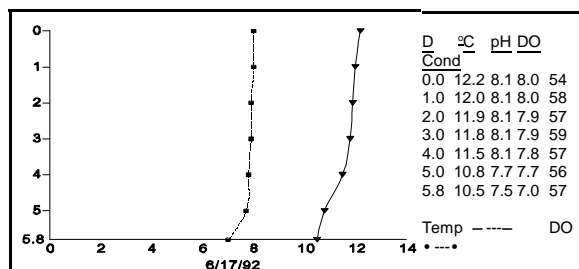
Water Column Data

Ammonia (mg/L)	0.03
Nitrate/Nitrite (mg/L)	0.02
Hardness (mg/L)	23.3
Alkalinity (mg/L)	29
Silica (mg/L)	8.4
Total Phosphorous (ug/L)	68

Miscellaneous Data

Limiting Nutrient	N
DO (Mg/l) at 75% depth	7.8
Stratification (m)	NO
Depth at Deepest Site (m)	5.8

summer substantiate the fact that water quality impairments do exist. Concentrations dropped dramatically downward in the water column reaching a level of 0.1 mg/L near the bottom as compared to the June 17, 1992 profile depicted. The oxygen deficiency is evidenced by the presence of two wind driven aerators on the lake. It is likely that conditions during the winter may pose a treat to the overwintering of fish due to potential anoxic conditions which need to be evaluated. It is evident that insufficient data exist to characterize the



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limnology of the reservoir. TSI values indicate the reservoir is eutrophic. Both profiles indicate that no thermocline develops due to the shallow nature of the reservoir. According to DWR no fish kills have been reported in recent years. DWR reports indicate the reservoir supports populations of brook trout (*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), and arctic grayling (*Thymallus arcticus*). Recent stocking reports indicate that the DWR stocks the lake annually with 4,000 catchable rainbow trout. The lake has not been treated for rough fish competition, so populations of native fishes may still be present in the lake.

Phytoplankton in the euphotic zone include the following taxa (in order of dominance)

Species	Cell Volume (mm ³ /liter)	% Density By Volume
<i>Anabaena spiroides</i>		
var. crassa	531.981	83.47
<i>Gloeotrichia echinulata</i>	55.600	8.72
<i>Staurastrum gracile</i>	33.249	5.22
<i>Sphaerocystis Schroeteri</i>	7.923	1.24
<i>Volvox aureus</i>	5.560	0.87
<i>Gloeocystis sp.</i>	0.834	0.13
<i>Microcystis aeruginosa</i>	0.734	0.12
<i>Haematococcus lacustris</i>		0.609
0.10		
<i>Pandorina morum</i>	0.445	0.07
<i>Coelosphaerium sp.</i>	0.250	0.04
Pennate diatoms	0.050	0.01
<i>Characiopsis sp.</i>	0.037	0.01
Centric diatoms	0.033	0.01
<i>Ankistrodesmus falcatus</i>	0.004	0.00
Total	637.268	
Shannon-Weaver [H']	0.65	
Species Evenness	0.25	
Species Richness	0.48	

The phytoplankton community is dominated by blue-green algae indicative of eutrophic conditions and lower water quality.

Pollution Assessment

Nonpoint pollution sources include: grazing, silviculture, construction and recreational development. The LaBaron II timber sale (1993) is the most recent silviculture. It involved group selection of timber in areas 0.5 acres or smaller. Private logging takes place to the east of the lake. About 520 head of cattle graze in the watershed and around the reservoir for part of the summer period.

There are no point pollution sources in the

watershed.

Information

Management Agencies

Fishlake National Forest	896-4491
Beaver Ranger District	438-2436
Five County Association of Governments	673-3548
Division of Wildlife Resources	538-4700
Division of Water Quality	538-6146

Recreation

Color Country Travel Region (St. George)	628-4171
Beaver KOA	438-2924
United Beaver Camperland	438-2808
Beaver Chamber of Commerce	438-2975

Reservoir Administrator

DWR	538-4700
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Beneficial Use Classification

The state beneficial use classifications include: boating and similar recreation (excluding swimming) (2B), cold water game fish and organisms in their food chain (3A) and agricultural uses (4).